RECEIVED
CENTRAL FAX CENTER
FEB 2 1 2007

REMARKS

This is a full and timely response to the non-final Official Action mailed **November 21, 2006.** Reconsideration of the application in light of the following remarks is respectfully requested.

Claim Status:

Claims 32-34 and 40-56 have been cancelled without prejudice or disclaimer. New claims 59-61 have been added. Consequently, claims 1-4, 6-30, 35-39, 57 and 58-61 are currently pending for further action.

35 U.S.C. § 112, First Paragraph;

The recent Office Action rejected claim 3 under the written description requirement of 35 U.S.C. § 112, first paragraph. Applicant respectfully disagrees.

Claim 3 recites "a cathode air profiling manifold disposed around said fuel cell stacks such that an air flow to said fuel cell stacks is made more equal by said air profiling manifold." Paragraph 0041 of Applicant's originally-filed specification describes the cathode air profiling manifold and states that "cathode air is distributed around each of the integrated fuel cell stack[s]."

Applicant believes this provides clear written description support for the subject matter of claim 3. Therefore, the rejection of claim 3 under 35 U.S.C. § 112, first paragraph, should be reconsidered and withdrawn.

Prior Art:

Claims 1-4, 6, 7, 10-13, 16-23, 35, 57 and 58 were rejected as being anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,480,738 to Elangovan et al. ("Elangovan"). For at least the following reasons, this rejection is respectfully traversed.

Claim 1 recites:

> An integrated fuel cell stack and catalytic combustor apparatus, comprising:
> a fuel cell stack assembly having multiple fuel cell stacks between which is defined a cavity;
> each of said fuel cell stacks including a plurality of individual fuel cells; and
> *a catalytic combustor disposed at least partially within said cavity, said catalytic combustor having a catalytic bed and a catalytic igniter.*

(Emphasis added).

Independent claim 19 recites:

> An integrated fuel cell stack and catalytic combustor assembly, comprising:
> a frame;
> a fuel cell stack assembly comprising multiple fuel cell stacks coupled to said frame, said fuel cell stack assembly having opposing fuel cell stacks wherein is defined a cavity;
> each of said fuel cell stacks including a plurality of individual fuel cells each having an anode, a cathode, and an electrolyte; and
> *a catalytic combustor disposed at least partially within said cavity such that a fuel channel is defined in a space between said catalytic combustor and said fuel cell stacks, and wherein said catalytic combustor includes a catalytic bed and a catalytic igniter.*

(Emphasis added).

Thus, claims 1 and 19 recite a catalytic combustor disposed at least partially in a cavity that is defined between multiple fuel cell stacks of a stack assembly.

In contrast, Elangovan does not teach or suggest the claimed catalytic combustor. In this regard, the Office Action cites to the fuel reformer (46) taught by Elangovan as being the claimed catalytic combustor. (Action of 11/21/06, p. 4). This conclusion can only be reached by ignoring that one of skill in the art would know and understand that a fuel reformer and a catalytic combustor are two very different devices having different purposes and operating on entirely different principles. While both do use a catalyst, that is where the similarity ends.

As explained in Elangovan, a fuel reformer is used to prepare fuel prior to consumption by a fuel cell. "Fuel reformation involves chemical conversion of a portion of the fuel from the difficult to react larger molecules and species to more electrochemically reactive chemical species. Accordingly, the fuel cell reaction is facilitated and the efficiency of the fuel cell is enhanced." (Elangovan, col. 3, lines 61-67).

In contrast, a catalytic combustor is used to dispose of unused fuel and/or unwanted byproducts after the fuel stream has passed through the fuel cell stack. This is explained in Applicant's specification which states that "the remaining cathode air, the reaction byproducts, and excess fuel are conveyed to the catalytic combustor (300), which is disposed within the cavity formed by the fuel cell stacks (210), *where the excess fuel and the oxidant are combusted*." (Applicant's specification, paragraph 0028).

Thus, one can only conclude that the reformer taught by Elangovan is the same as the claimed catalytic combustor if one ignores the art-recognized definitions for a fuel reformer and a catalytic converter and further ignores the knowledge that would have been possessed by one of ordinary skill in the art that the two are very different things. To the contrary, if the claims terms are given reasonable scope within the art-recognized meaning of those terms and the definition given in Applicant's specification, it is inescapably clear that Elangovan fails to teach or suggest the catalytic converter disposed at least partially between fuel cell stacks as claimed.

"A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed.

Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least these reasons, the rejection of claims 1 and 19, and their respective dependent claims, based on Elangovan should be reconsidered and withdrawn.

Additionally, various dependent claims of the application recite subject matter that is further patentable over the prior art of record. Specific, non-exclusive examples follow.

Claim 2 recites "a fuel flow channel defined in space between said catalytic combustor and said fuel cell stacks." Because Elangovan fails to teach or suggest a catalytic combustor, Elangovan cannot teach or suggest the claimed fuel flow path defined between such a combustor and fuel cell stacks.

Claim 3 recites "a cathode air profiling manifold disposed around said fuel cell stacks such that an air flow to said fuel cell stacks is made more equal by said air profiling manifold." In contrast, Elangovan teaches that all air is routed to a central plenum (28) between the stacks. There is no profiling manifold disposed around the fuel cells stacks, as claimed, that makes air flow more equal to the stacks.

Claim 4 recites "wherein said air profiling manifold comprises an outer skin and an inner profiling skin having a plurality of holes enclosing said fuel cell stacks." Similar subject matter is recited in claim 29. This subject matter is not taught or suggested by the prior art of record.

Claim 57 recites "wherein said catalytic combustor is configured to normalize an operating temperature gradient within said fuel cell stacks." Because Elangovan fails to teach or suggest a catalytic combustor, Elangovan cannot teach or suggest the claimed normalization of an operating temperature gradient by a catalytic combustor.

Claim 58 recites "further comprising an excess cathode air router coupled to an end of said fuel cell stack assembly." In contrast, Elangovan fails to teach or suggest an excess cathode air router. Moreover, the Office Action fails to indicate how or where Elangovan teaches or suggests the claimed excess cathode air router.

For at least these additional reasons, the rejection of each of the claims discussed above should be reconsidered and withdrawn.

Claims 8 and 9 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Elangovan and U.S. Patent App. Pub. No. 2002/0102445 Senner ("Senner"). This rejection is respectfully traversed for at least the following reasons.

Claim 8 recites "further comprising a flame arrestor in fluid communication with a distal end of said fuel cell stacks to said catalytic combustor." While Senner teaches a flame arrestor in combination with a combustor (paragraph 0041), this is irrelevant since Elangovan does not teach or suggest a catalytic combustor. Once it is understood that Elangovan does not teach or suggest a catalytic combustor, it is unmistakably clear that one of skill in the art would not attempt to use the flame arrestor taught by Senner in the system taught by Elangovan. Consequently, the proposed combination of Elangovan and Senner would never have been considered by one of skill in the art and clearly does not render obvious the subject matter of claim 8. For at least these reasons, the rejection based on Elangovan and Senner should be reconsidered and withdrawn.

Claims 13, 24-30 and 35 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Elangovan and U.S. Patent App. Pub. No. 2004/0081871 to Kearl et al.

("Kearl"). However, this rejection is improper and must be withdrawn under 35 U.S.C. § 103(c).

35 U.S.C. § 103(c) states:

> Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Applicant notes that Kearl is available as prior art against the present application only under 35 U.S.C. § 102(e). Kearl was published April 29, 2004, *after* the filing of the present application October 1, 2003.

Applicant also notes that Kearl is assigned to the Hewlett-Packard Co. (*See*, recorded assignment at reel/frame 013776/0928). Similarly, the present application is also assigned to Hewlett-Packard Co. (*See*, recorded assignment at reel/frame 014598/0763).

Applicant hereby states that the subject matter of the present application and the Kearl reference were, at the time the invention of the present application was made, owned by, or subject to an obligation of assignment to, the same person, i.e., Hewlett-Packard Co. (*See* MPEP § 706.02(l)(2)). Consequently, under 35 U.S.C. § 103(c), the Kearl reference *cannot* be applied as prior art against the present application under 35 U.S.C. § 103(a). Therefore, the rejection which applies Kearl under § 103(a) in combination with Elangovan must be reconsidered and withdrawn.

Claims 14, 15 and 36 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Elangovan and U.S. Patent No. 5,525,311 to Girod et al. ("Girod"). This rejection is traversed for at least the following reasons.

Claim 14 recites "wherein said catalytic bed has a catalytic profile varying between a higher catalytic coefficient at a distal end of said catalytic combustor and a lower catalytic coefficient at a proximal end." Claim 36 recites similar subject matter.

As noted above, Elangovan does not teach or suggest a catalytic combustor. Consequently, any teachings relevant to a catalytic combustor would not have been considered by one of skill in the art as a possible modification to Elangovan.

Moreover, the Office Action argues the Girod teaches "reaction zones having different temperature profile or gradient attributed to catalyst variation." (Action of 11/21/07, p. 15). Assuming *arguendo*, that this is an accurate statement of what Girod teaches, this is still not a teaching of the claimed subject matter with "a catalytic profile varying between a higher catalytic coefficient at a distal end of said catalytic combustor and a lower catalytic coefficient at a proximal end."

Consequently, the Office Action has failed to demonstrate how or where the cited prior art teaches the subject matter of claim 14. For at least these additional reasons, the rejection based on Elangovan and Girod should be reconsidered and withdrawn.

Claims 37-39 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Elangovan and U.S. Patent App. Pub. No. 2004/0157096 to Peterson ("Peterson"). This rejection is respectfully traversed for at least the same reasons given above with respect to the independent claims.

Conclusion:

The newly added claims are thought to be patentable over the prior art of record for at least the same reasons given above with respect to the original independent claims. Therefore, examination and allowance of the newly added claims is respectfully requested.

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,

DATE: February 21, 2007

Steven L. Nichols
Registration No. 40,326

Steven L. Nichols, Esq.
Managing Partner, Utah Office
Rader Fishman & Grauer PLLC
River Park Corporate Center One
10653 S. River Front Parkway, Suite 150
South Jordan, Utah 84095
(801) 572-8066
(801) 572-7666 (fax)

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being transmitted to the Patent and Trademark Office facsimile number 571-273-8300 on February 21, 2007. Number of Pages: 19

Rebecca R. Schow